

Montana Fish, Wildlife & Parks

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September 22, 2000

Ref. DO0845-00

Brian Brown
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Dear Brian:

The following comments are offered to the National Marine Fisheries Service (NMFS) by Montana Fish, Wildlife and Parks (MFWP). In addition to this letter and its attachments, we request the opportunity to consult with NMFS on several topics discussed in detail below. Our staff will be contacting you in the near future to arrange this consultation.

The areas of particular interest to MFWP are:

1. We strongly support the proposed implementation of VARQ. VARQ is an important component of the IRCs, which Montana continues to support as the basis for operations at Libby and Hungry Horse.
2. The flow recommendation for the South Fork Flathead below Hungry Horse Dam (1000 cfs) was based on data collected upstream of the reservoir. We have recently completed a flow study in the affected river reach. We provide a flow recommendation based upon this new information. We would like to consult with U.S. Fish and Wildlife Service (USFWS) and NMFS with the goal of having our recommendation incorporated into the final Biological Opinions (130s) prepared by the two agencies.
3. It is our understanding, based upon personal communications, that flow forecasting errors combined with management decisions resulted in more extreme operations at Hungry Horse and Libby than may be necessary. This is another area we wish to discuss with USFWS and NMFS and try to resolve prior to completion of the BOs.
4. We support NMFS proposal to help mitigate impacts to the Kootenai River bull trout and white sturgeon during July through September flow releases by planning a constant, rather than fluctuating, release during this time period. A similar operating strategy should be implemented in the Flathead drainage.
5. We recommend that NMFS, USFWS, MFWP and the Confederated Salish and Kootenai Tribes jointly develop a water management plan for both Libby and Hungry Horse each spring that would be followed unless forecasted conditions do not materialize. Changes in the plan necessitated by changing conditions would be discussed and agreed upon in the Technical Management Team.

Detailed Comments Specific to Proposed Libby and Hungry Horse Operations

1. The State of Montana strongly supports the proposed implementation of VARQ. This will help to provide additional water in both Libby and Horse that will help provide a more equitable balance between the needs of salmon, bull trout, sturgeon and resident fish. We also support the implementation schedule proposed that would implement VARQ at Horse this winter with Libby following in one year to allow time for consultations with Canada.
2. The requirements for Libby are consistent with current operations and are supported by Montana. It is important to note that Montana has been willing to work with NMFS and USFWS to operate Libby this year in a way that provided benefits to both bull trout below the project and to salmon in the Lower Columbia. This operation was not without biological costs. The reservoir behind Libby was drafted deeper and failed to refill by a greater amount than was technically permitted or required in the current 130. Montana agreed to this operation, because there was little that could be done to avoid the impacts to the reservoir given the large draft in June for sturgeon and the errors in the runoff volume forecasts. Yet we saw the opportunity to preserve good, not optimal, conditions in the river below Libby by maintaining a constant outflow for the months of July through September. This discharge volume also provided more water for salmon than was technically permitted under the BO. This is an excellent example of how NMFS and Montana should work together to establish suitable operations that balance the conditions for Montana's fish and wildlife resources with salmon and steelhead recovery. We believe the Libby requirements in the draft BO continue to permit this operational flexibility.
3. We appreciate NMFS willingness to help mitigate impacts in the river below Libby by planning a steady draft from July through September. This strategy helps to avoid the most severe impacts caused by a second, unnatural flow peak in August that occurred in past attempts to meet white sturgeon, and later in the season, anadromous flow targets. The double-peak drafting strategy caused significant, and in our view, unnecessary impacts on bull trout and other resident fish and aquatic resources.
4. We recommend that a management plan for operating Libby reservoir be jointly developed by the end of April each year plan based on actual and forecast hydrologic conditions at the reservoir. The main components of this management plan will be a sturgeon release based on reservoir storage volumes and projected runoff for June, a constant flow for July through September and ramping rates. Our recommended ramping rates are enclosed with this letter. The first priority should be balancing sturgeon flow needs with retaining sufficient runoff to refill Libby reservoir by July 31. This will provide the flexibility to meet the needs of bull trout and anadromous fish during the critical months of July through September. The amount and timing of the release of water for sturgeon in early June should be sized to not limit the refill of the reservoir behind Libby dam. MFWP proposes using a sliding scale to determine discharge in the Kootenai River during the summer, based on water availability. We would begin with the water volume in storage above elevation 3540 on July 1 and add the 25th percentile inflow predictions for the months of July through September. We recommend the 25th percentile because the biological consequences of over-forecasting inflows and having to rapidly drop flows out of the project are much more severe than if inflows are higher and flows need to be ramped up. This planned flow strategy would be followed unless condition change in which case the changes would be discussed and agreed upon in TMT. We believe a similar approach should be taken at Hungry Horse reservoir as well.

5. We expect that the full 20-foot draft of Libby would not be necessary in every year. We suggest that the standard be a 10-foot draft. If spring forecasts indicate a need for a deeper draft, the strategy for operating the reservoir will be described in the water management plan as outlined above.
6. The proposed BO requirements to draft 30 feet or more from full pool at Hungry Horse are of great concern to MFWP. We understand that it is becoming increasingly difficult to balance the needs of all of the listed species and the needs of resident fish and wildlife, but from our perspective the proposed requirements do not achieve the proper balance. The USFWS BO requirements for minimum flows out of Horse for bull trout in the South Fork of 1000 cfs combined with NMFS desire to utilize the volume of water that would be in storage between the elevations of 3560 (full) and 3540 (the current draft limit for salmon flow augmentation) lead to conflicts in many water years. The bull trout minimum flow that was proposed by the USFWS was based on data from the river above Hungry Horse Reservoir. MFWP has recently been able to conduct additional wetted perimeter studies in the South Fork (attached) and has been in consultation with the Service on the minimum flow requirements for bull trout in the South Fork below the darn. Based upon this work we are recommending a different flow to the USFWS for this reach of river. Our recommendation, which is included with this letter, provides adequate flows for bull trout and provides greater frequency of reservoir refill. We suggest that this recommendation be included in the final versions of the USFWS and NMFS 130s. We would like to consult with both agencies on this subject prior to finalization of the 130s.
7. Apparent errors in the current hydrosimulation studies give us significant concerns. These studies were based on the traditional 50-year water record. In looking over the modeled operation of Horse across this water record we observe that in 36 of the 50 years Hungry Horse reservoir has an ending elevation less than the current draft limit of 3540. This is an unacceptably high frequency (72 percent of the time) when the reservoir will experience significant biological impacts. The poor status of the reservoir in some years would cause drastically reduced flows in the fall that would cause significant impacts on bull trout below the project. We understand, based on personal communications with NMFS staff, that the errors made in these studies might reduce this failure rate but at this time it is unclear how much.
8. We understand that the BO requested volume for salmon of 481 kaf is also in error. In years when Horse refills by the end of June the simulated salmon draft takes the reservoir below elevation 3540. The BO does not intend this modeled consequence so we must interpret this as an error in the volume calculation. This calculation should be replaced with our proposed strategy to manage summer drafts based on water stored and inflow forecasts (see #3 above).
9. We request an opportunity to consult with you on the issues associated with Hungry Horse. The minimum flow strategy we are recommending, when combined with the other changes such as VARQ, is sufficient to provide additional flow augmentation volumes with greater probability than occurred in past BO operations. The State of Montana is also committed to working with NMFS during particularly low flow years. This year was an example of when operations could have been improved because Libby was drafted significantly below the BO elevation making it difficult to provide protection for bull trout below the project and anadromous species downstream while trying to refill the reservoir. This cooperative working relationship can provide benefits for all listed species while minimizing potential impacts on resident fish and wildlife.

10. We also recommend an annual planning process for Horse operations during the July through September period as described for Libby in #3 above.

General Comments

1. The Draft BO includes annual and 5 year plans. It is our understanding that both the annual and five year plans will be updated annually to reflect any new information or changes that are appropriate over the ten year time frame of this 130. This is a good ongoing planning process that will continue the efforts to establish a continuous management process to implement FCRPS improvements. However, the BO also calls for 3, 5 and 8 year reviews. It is unclear what purpose these intermediate reviews provide given that the adult fish that will be returning for the 3 and 5 year reviews have migrated out of the system under the current 130. While the 8 year review might be the time to begin to develop the 2011130, it is possible that the rolling 1 and 5 year plans will be a more effective way to provide an ongoing planning process that changes and adapts to new information whenever it occurs.
2. The use of biological performance standards to manage the process of operating the FCRPS to maximize survival of listed fish is a positive conceptual framework to insure that the region's limited water resources are used most effectively. However, there continues to be a lack of data and understanding of how best to use available reservoir storage. Montana continues to have concerns with recommendations to draft reservoirs in Montana to provide flows that have speculative biological benefits. This is particularly concerning when the impacts on resources in Montana are quite certain and in most cases clearly documented by our scientists. The development of Integrated Rule Curves (IRC) was precisely for this purpose. It concerns us that there continues to be little recognition of the importance of protecting river and reservoir ecosystems in Montana by restricting deep reservoir drawdowns and unnatural river fluctuations. We are hopeful that the development and application of biologically based performance standards in this BO will improve measurement and evaluation of the biological benefits to salmon and provide a basis for comparison with the measured impacts that Montana has documented in the development of the IRCs.

Conclusions

MFWP appreciates this opportunity to comment on the Draft 130. In many ways this document will help the region to continue to improve the survival of all the listed species impacted by the FCRPS. We support you in beginning the process of establishing an annual and a five-year plan that are updated every year. This will allow new information and data to be applied to BO requirements as soon as it is available. We request the opportunity to consult with NMFS and USFWS to reach a final agreement on the specific requirements for Hungry Horse and Libby reservoirs. This consultation should occur prior to any final decision by NMFS or USFWS. Thank you for considering our recommendations and we are hopeful that NMFS and the Service will continue to seek to provide a balance between the needs of salmon, sturgeon, bull trout, resident fish and wildlife

Sincerely,

Patrick J. Graham
Director

cc: Tim Hall

Donna Darm.
General Carl Strock
William McDonald
Judy Johansen
Jim Litchfield

ATTACHMENT to Doc # 2

Write to Bonneville Power Administration for Full Text

Evaluation of Minimum Flow Requirements in the South Fork Flathead River Downstream of Hungry Horse Dam, Montana.

Montana Wetted Perimeter Method

August and September 2000

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EXECUTIVE SUNIMARY

This project was completed by Montana Fish, Wildlife & Parks at the request of the Bonneville Power Administration and U.S. Fish and Wildlife Service to clarify the minimum flow requirement for the South Fork Flathead River downstream of Hungry Horse Dam. The existing minimum flow in this reach is 145 cfs. This volume is less than the turbine flow needed to maintain station service power at the dam (approximately 300 cfs). Prior estimates of the required minimum flow for this river reach were based on the Montana Wetted Perimeter technique in the South Fork Flathead River upstream of Hungry Horse Reservoir and may not be descriptive of the reach downstream of Hungry Horse Dam. Direct measurements in the affected reach were necessary to establish a minimum flow that adequately protects fish species of special concern, including threatened bull trout (*Salvelinus confluentus*).

The U.S. Bureau of Reclamation provided a gradual reduction of Hungry Horse Dam discharges to enable measurements for calibrating the WETP model. Field sampling began on August 22, 2000 and was completed on September 5, 2000. Stage measurements were completed at six transects located across riffles and shallow runs, at five levels of flow. Riffle and shallow run habitats were the focus of the WETP technique because they are most susceptible to dewatering as flows decline, and contain unembedded cobble substrate critical to aquatic insect production. Variation explained by the stage - discharge linear regression models for each transect ranged from $R^2 = 0.98$ to 0.99. Specific estimates of wetted perimeter at each transect and water stage were evaluated separately by habitat type and later pooled to establish the minimum flow for the affected reach. The primary inflection point in the relationship between wetted perimeter and discharge occurred at 900 cfs, and a secondary inflection occurred at 400 cfs.

The minimum flow shall be determined based on the January final volume runoff forecast for Hungry Horse Reservoir for the period of April 1 to August 31. When the April through August forecast is greater than 1,790 KAF, the minimum flow shall be 900 cfs. When the forecast is less than 1,190 thousand acre-feet (KAF), the minimum flow may be reduced to 400 cfs. When the forecast is between 1,190 and 1,790 KAF, the minimum flow shall be linearly interpolated between 400 and 900 cfs. These adjustments are necessary to balance the benefits of flow protection for bull trout in the South Fork below the dam with reservoir refill, and associated biological benefits in the Flathead and Columbia River systems. Dam discharges must be consistent with the minimum flow requirement of 3,500 cfs at Columbia Falls. The minimum flow in the South Fork can be lowered to the physical limit (145 cfs) when the river reaches flood stage at Columbia Falls (13 ft msl).